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PROTECTION AGENCY
REGION IX
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**STATE OF HAWAII
DEPARTMENT OF HEALTH
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Captain Richard D. Hayes
Regional Engineer
Navy Region Hawaii
850 Ticonderoga Street, Suite 110
Pearl Harbor, Hawaii 96860-5101

Re: Conditional Approval of Red Hill AOC SOW Deliverable under Sections 6 & 7 – Work Plan/ Scope of Work, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, November 5, 2016 Revision 01

Dear Captain Hayes:

The U.S. Environmental Protection Agency (“EPA”) and Hawaii Department of Health (“DOH”), collectively the “Regulatory Agencies”, have reviewed the revised *Work Plan/ Scope of Work, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility* (“revised Section 6&7 SOW”) submitted by the U.S. Navy (“Navy”) and Defense Logistics Agency (“DLA”) on November 5, 2016. The Regulatory Agencies are conditionally approving the Section 6&7 SOW in part, pursuant to AOC Sections 7(b)(b). The revised Section 6&7 SOW will be approved once the Navy and DLA address the comments included in the enclosure to this letter.

The November 5, 2016 Section 6&7 SOW revision has been restructured to incorporate collaborative and iterative processes to accomplish the AOC SOW section 6&7 tasks, which addresses Comment #1 in our September 15, 2016 disapproval letter. This revised Section 6&7 SOW includes the development and submittal of derivative deliverables, multiple check in points with the Regulatory Agencies, external subject matter experts and other stakeholders, and acknowledgement that information presented in the revised Section 6&7 SOW is preliminary and subject to change based on new information. The revised Section 6&7 SOW also provides flow and Gantt charts that clearly lay out the sequence and schedule for accomplishing the work required by Sections 6&7 of the Red Hill Administrative Order on Consent Statement of Work (AOC SOW), as well as showing how the work relates to other tasks required by the AOC SOW. Collectively, these revisions to the SOW address the 11 main comments we included in our September 15, 2016 letter.

The detailed comments we provided in the enclosure to our September 15, 2016 letter, as well as comments provided by the Honolulu Board of Water Supply in their June 3, 2016 letter (attached to our

September 15, 2016 letter) remain outstanding and will still need to be addressed in the appropriate deliverable as the Navy completes the tasks described in the revised Section 6&7 SOW.

The Regulatory Agencies are conditionally approving the Section 6&7 SOW because there are some corrections that need to be made to the revised Section 6&7 SOW. We have discussed the nature of these required corrections with the Navy and understand that in some cases there were omissions of text that should have been included, and in other cases text from previous versions of the document that should have been deleted was not. The remaining corrections involve areas where the Regulatory Agencies believe more discussion and collaborative decision making is necessary. These issues can be addressed as the Navy and DLA develops the deliverables described in the revised section 6&7 SOW. The comments listed in the attachment to this letter will need to be addressed by the Navy and DLA in order for the Regulatory Agencies to fully approve this revised Section 6&7 SOW. We request that the Navy make the appropriate corrections and resubmit the Section 6&7 SOW to the Regulatory Agencies within two weeks of your receipt of this letter. Notwithstanding the need to make these corrections, the Section 6&7 SOW is approved for the purpose of beginning the 24-month deadline for the Navy's and DLA's subsequent deliverables as described in the Red Hill AOC SOW.

We are available to discuss our comments in more detail. Please contact us with any questions. Bob Pallarino can be reached at (415) 947-4128 or at [[HYPERLINK "mailto:pallarino.bob@epa.gov"](mailto:pallarino.bob@epa.gov)] and Steven Chang can be reached at (808) 586-4226 or at [[HYPERLINK "mailto:steven.chang@doh.hawaii.gov"](mailto:steven.chang@doh.hawaii.gov)].

Sincerely,

Bob Pallarino
EPA Red Hill Project Coordinator

Steven Chang, P.E.
DOH Red Hill Project Coordinator

Enclosure

cc: Mr. Aaron Poentis, NAVFAC
Mr. John Montgomery, U.S. Navy

**Enclosure 1 – Corrections Required in November 5, 2016 Sections 6 & 7 –
Work Plan/ Scope of Work**

Comment 1

Section 2.4 Procedural Approach, Page 8 of 58

Lines 22- 24

The sentence “As noted in the Table [1], all derivative deliverables will include at least one discussion meeting with the AOC Parties prior to initial submittal, and at least one discussion meeting with AOC Parties and SMEs after Regulatory Agency review of the initial submittal.” should be removed. Table 1 does not include the information on discussion meetings with Regulatory Agencies and SMEs.

Comment 2

Section 2.7 Developing the Design for Obtaining Data, Page 13 of 58

Lines 25 – 30

The Regulatory Agencies require that all new developed monitoring wells be included in the regular sample collection schedule, currently monthly for the period of November 2016 through March 2017. This results of this short term monthly schedule will be evaluated and a determination will be made by the Parties to the AOC as to whether the monthly schedule will be retained or whether the Navy can resume groundwater sampling on a calendar quarter schedule. Conducting an initial round of one wet-season and one dry season sampling event, which could result in only two samples being obtained during the first year of the new wells operation, is not appropriate and will not be approved by the Regulatory Agencies. The Navy can maintain the regular sampling schedule and still designate a given sample as representative of wet-season or dry-season conditions.

Comment 3

Section 3.2.1 Task Description (Task 2 Investigate NAPL), Page 18 of 58

Lines 6 - 9

This section should include consulting with the University of Hawaii (UH) in determining the universe of geophysical methods that could be used in investigating NAPL in the area around the Red Hill Facility. UH is currently looking at various geophysical methods in detail for this area and the Pearl Harbor Aquifer in general. It would be beneficial, that prior to investing significant capital in a geophysics survey, the Navy and their contractors meet with UH and collaborate efforts and knowledge.

Comment 4

Section 2.3, page 6, Line 41; Section 2.4, page 8, Table 1; and Section 3.4.1, page 22, Lines 12-18

These sections all refer to the Navy's plan to drill replacement wells RHMW01R and OWDFMW01R, the purpose of which is to adjust the screened interval for these wells. Although the Regulatory Agencies are not against the idea of drilling a new well to replace OWDFMW01, due to the large cost involved, we believe the Navy should review and fully understand the problem with the existing well. The Regulatory Agencies believe a decision to drill these two replacement wells needs to be discussed among the Parties and relevant stakeholders before a final decision is made by the Navy to proceed. The revised Section 6&7 SOW seems to imply that the Navy has already made the decision to install these wells, which the Regulatory Agencies believe is premature.

Comment 5

Section 3.4.1 Task Description, Table 9, Page 24 of 58

Lines 12 -13

Footnote f to Table 9 states that Groundwater chemistry parameters will be collected only for one round of groundwater sampling. Determining the total number of groundwater chemistry parameter sampling events should be included as part of the Sampling and Analysis Plan deliverable and the actual number of sampling events be open to discussion by the Parties to the AOC and appropriate SMEs.

Comment 6

Page 24 of 58, Lines 14 – 20 and Page 25 of 58, Line 2

The Regulatory Agencies have comments on the Navy's proposed approach to conducting topographic and gyroscopic surveys. This section should include a clear statement that the survey information presented in this document is draft and that the final procedures to be used will be included in the Sampling and Analysis Plan as indicated in Table 7.

Specifically, the Regulatory Agencies believe

- A reference to and definition of the requirements of a first-order leveling survey should be provided, since this is standard requested by the USGS.
- The Regulatory Agencies question whether a precision of 0.001 ft. is attainable. If this is a mistake it should be corrected. If that is the precision intended, then it should have further explanation.
- The reference to Kenney (2010) does not seem to be appropriate. The primary concern in the proposed survey is getting a Top-of-Casing elevation that is accurately referenced to a common datum for wells that are separated by miles. Kenney (2010), while specifying a precise vertical accuracy, is intended for surveying in a stream gaging station. The vertical datum for a stream gage can be arbitrary as the surveyed area is very local. This is not the case for defining the groundwater elevation over the Red Hill model domain.

Comment 7

Section 3.5 Task 5: Update the Existing Groundwater Flow Model, Page 26 of 58

This section should include acknowledgement of the other groundwater modeling work being done in this area by other organizations such as USGS and University of Hawaii (UH). The USGS is currently working on a groundwater flow that includes the Red Hill area. UH is also, in collaboration with the USGS, conducting groundwater research in the area that includes Red Hill and advanced groundwater modeling. Included in the groundwater investigation/modeling task descriptions should be a review of these efforts and how the results of these investigations can be integrated with the Red Hill groundwater investigation efforts. Not collaborating between groundwater investigations efforts could result in conflicting conclusions about groundwater flow patterns in the Red Hill Region. If such a conflict should arise, it is likely the NAVFAC/AOC effort will have the least credibility. This could likely invalidate a large investment incurred to do the groundwater investigation.

Comment 8

Figure 4, Schedule for Sections 6&7 AOC and Derivative Deliverables

All process steps for deliverables should include an opportunity for Subject Matter Expert review and comment. Some of the deliverables include this step, others do not. It appears to be an oversight but needs to be corrected in the final version of the revised Section 6&7 SOW.